

Introduction to CORSIA

By ICAO Secretariat

Introduction

In 2010, ICAO Member States adopted two global aspirational goals for the international aviation sector: an annual average fuel efficiency improvement of 2 per cent; and keeping the global net carbon emissions from 2020 at the same level (also referred to as carbon neutral growth from 2020, or CNG2020).

To contribute to the achievement of these goals, ICAO Member States have since then developed and submitted their State Action Plans, whereby they establish their strategy on climate change for the international aviation sector, selecting appropriate emissions mitigation measures from ICAO's basket of measures to reduce CO₂ emissions from international aviation. Such measures include aircraft technologies, operational improvements, and the use of sustainable fuels. As of mid-June 2022, 129 ICAO Member States have submitted their State Action Plans. More information on State Action Plans can be found in *Chapter 11* and in the ICAO website¹.

As a complement to these aviation in-sector CO₂ reduction measures aimed at ensuring the achievement of the carbon neutral growth goal, ICAO Member States adopted, at the 39th Session of the ICAO Assembly in 2016, a global market-based measure scheme for international aviation, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA). Thus, CORSIA became the first global market-based measure for any industry sector.

At the 40th Session of the ICAO Assembly in 2019, ICAO Member States reiterated the two global aspirational goals for the international aviation sector, welcomed the progress made on CORSIA implementation since 2016, and emphasized the strong support of ICAO Member States for a global solution for the international aviation industry,

as opposed to a possible patchwork of duplicative State or regional market-based measures.

Establishment of the CORSIA implementation framework

Following the historic agreement at the 39th Session of the ICAO Assembly, the ICAO Council initiated its work on a series of actions required to make CORSIA implementation possible, as per a timeline that highlighted two key dates:

- 1 January 2019, the starting date for the monitoring, reporting and verification (MRV) of CO₂ emissions under CORSIA; and
- 1 January 2021, the starting date of CORSIA's pilot phase (2021-2023).

Key milestones prior to 1 January 2019

Ahead of the start of the CORSIA MRV system on 1 January 2019, the focus of Council's work, with the technical contribution of the Council's Committee on Aviation Environmental Protection (CAEP), was on the development of the Standards and Recommended Practices (SARPs) for CORSIA implementation. The CORSIA SARPs determine the required actions by States, aeroplane operators and third-party verification bodies to implement CORSIA (i.e. the "who", "what" and "when"). The CORSIA SARPs were compiled in Volume IV of Annex 16 (*Environmental Protection*) to the Convention on International Civil Aviation, whose first edition was adopted by the Council in June 2018 and became applicable on 1 January 2019².

In order to support the implementation of the CORSIA SARPs, technical guidance on CORSIA implementation (i.e. the "how") was developed by CAEP and compiled in

1 https://www.icao.int/environmental-protection/Pages/ClimateChange_ActionPlan.aspx

2 <https://www.icao.int/environmental-protection/CORSA/Pages/SARPs-Annex-16-Volume-IV.aspx>

Volume IV of the *Environmental Technical Manual* (Doc 9501). The first edition of ETM, Volume IV was published in August 2018.

When reaching agreement on CORSIA in 2016, ICAO Member States requested the Council to develop simplified MRV procedures, with the purpose of preventing small operators from bearing an undue burden when implementing the MRV provisions in CORSIA. In response to this request, CAEP developed the ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT). The first version of the tool, published in July 2018, could be used by operators for various purposes, namely: to assess whether CORSIA MRV requirements were applicable to them; and if so, whether they were eligible to use the ICAO CORSIA CERT to estimate their CO₂ emissions from international flights from 2019 onwards.

Aware of the fact that a number of States needed assistance to prepare themselves for the implementation of the CORSIA MRV system from 1 January 2019, the Council endorsed, in July 2018, the ICAO ACT-CORSIA (Assistance, Capacity-building and Training for CORSIA) programme as part of the *No Country Left Behind* initiative. The programme, whose scope and timeline have spanned beyond its original purpose of “bringing States up to speed”, has become an invaluable support for States in their implementation of CORSIA. The ICAO Assembly, at its 40th Session in 2019, highlighted this programme, and emphasized the importance of a coordinated approach under the umbrella of ICAO. More information on the ACT-CORSIA programme can be found in Chapter 11 and in the ICAO CORSIA website³.

Key milestones prior to 1 January 2021

With CORSIA implementation under way from 1 January 2019, work continued ahead of the start of CORSIA’s pilot phase on 1 January 2021. A second edition of the ETM, Volume IV, containing additional guidance developed by CAEP on CORSIA implementation, was published in September 2019⁴.

Council’s work focused on the development of the five CORSIA Implementation Elements, with contributions from CAEP and the Council’s Technical Advisory Body (TAB). This work translated into the production and maintenance of a series of related ICAO documents which contain materials that are essential for the implementation of CORSIA and are directly referenced in Annex 16, Volume IV. These documents, which are approved by the Council for publication on the ICAO CORSIA website⁵, are the following:

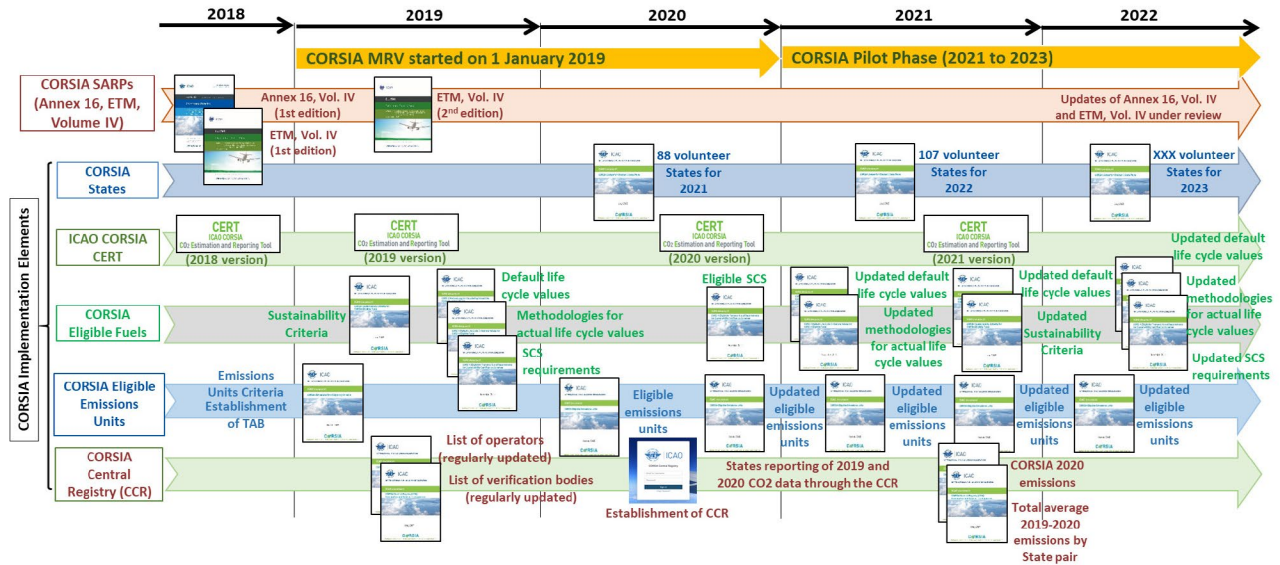
- The ICAO document *CORSIA States for Chapter 3 State Pairs*, listing the States that participate in CORSIA in a given year from 2021; this document is updated on an annual basis since its first edition published in July 2020.
- The previously-mentioned ICAO CORSIA CERT, updated on an annual basis since its first (2018) version, in order to incorporate additional functionalities and update the tool’s background information to allow aeroplane operators to apply MRV simplified procedures. More information can be found in the dedicated article in Chapter 8.
- The five ICAO documents related to CORSIA Eligible Fuels, whose respective first editions were completed prior to the start of CORSIA’s pilot phase. Since then, further updates have been published for some of these ICAO documents. More information can be found in the dedicated article in Chapter 8.
- The two ICAO documents related to CORSIA Eligible Emissions Units, including the ICAO document *CORSIA Emissions Unit Eligibility Criteria*, whose first edition was approved by the Council in March 2019; and the ICAO document *CORSIA Eligible Emissions Units*, which is regularly updated on the basis of TAB recommendations since its first edition in March 2020. More information on the work of TAB can be found in the dedicated article in Chapter 8.

³ <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>

⁴ <https://www.icao.int/environmental-protection/CORSIA/Pages/ETM-V-IV.aspx>

⁵ <https://www.icao.int/environmental-protection/CORSIA/Pages/implementation-elements.aspx>

ICAO completes all essential components for CORSA implementation package



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FIGURE 1: Development of the CORSA Implementation Package (2018 – 2022)

- The ICAO documents containing information derived from States’ reporting through the CORSA Central Registry (CCR), which was launched in May 2020, ahead of the deadline of 31 August 2020 for State reporting of 2019 CO₂ emissions under CORSA. Information contained in these documents include, *inter alia*: a list of aeroplane operators attributed to States and a list of accredited verification bodies (regularly updated since they were first published in May 2019); total 2020 CO₂ emissions to determine the first year in which a new entrant will be subject to offsetting requirements in CORSA (published in November 2021); or total average CO₂ emissions for 2019 and 2020 aggregated for all aeroplane operators on each State pair route (published in December 2021). Upon the start of CORSA’s pilot phase in 2021, data collected through the CCR allows for the calculation of CORSA annual Sector’s Growth Factor. More information on the CCR can be found in the dedicated article in Chapter 8.

States and operators’ participation in CORSA

Under CORSA, all operators conducting international flights are required to monitor and verify the CO₂ emissions from these flights, and to report the related information to their State of registration. Consequently, all States with operators conducting international flights have a CORSA MRV system in place since 1 January 2019, which allows the States to compile the information from operators, aggregate such information, and report to ICAO through the CCR. More information on the status of State reporting through the CCR can be found in the dedicated article in Chapter 8.

Upon the start of CORSA’s pilot phase, the monitoring, reporting and verification of CO₂ emissions from all international flights is complemented with the calculation of offsetting requirements associated to the emissions from those international routes connecting States participating in CORSA. During the pilot and first phases of CORSA (2021-2023 and 2024-2026, respectively), State participation in CORSA is determined on a voluntary basis.

Figure 1 reflects the timeline for the development of the three pillars of CORSA implementation (Annex 16, Volume IV; ETM, Volume IV; and the five CORSA Implementation Elements).

For 2021, 88 States volunteered to participate in CORSIA's pilot phase. For 2022, the number of volunteer States increased to 107. The number of volunteer States for 2023 will be determined after the deadline of 30 June 2022 for the notifications from States, and reflected in the third edition of the ICAO document *CORSIA States for Chapter 3 State Pairs*. As of mid-June 2022, five more States had already announced their voluntary participation in CORSIA in 2023, increasing the number of volunteer States to 112.

Mechanisms for possible adjustments in CORSIA: the safeguards provision and the periodic review

When reaching agreement on CORSIA in 2016, and as recalled by the 40th Session of the ICAO Assembly in 2019, ICAO Member States established two mechanisms for the consideration of possible adjustments to CORSIA throughout its implementation, namely:

- The CORSIA safeguards provision, which aims at ensuring that CORSIA contributes to the sustainable development of the international aviation sector and does not lead to an inappropriate economic burden on the sector; and
- The provision for a CORSIA periodic review, to be conducted by the Council every three years from 2022. The CORSIA periodic review serves as an important basis for the Council to consider whether it is necessary to make adjustments to the subsequent phase or compliance cycle and, as appropriate, to recommend such adjustments to the ICAO Assembly for its decision.

While the CORSIA periodic review is a mechanism subject to a pre-defined schedule (every three years from 2022, with a special review by the end of 2032), the CORSIA safeguards provision provides a means for the Council to react to unexpected circumstances that may have a significant impact on CORSIA.

The COVID-19 pandemic and its impact on CORSIA triggered the application of the CORSIA safeguards provision and also affected the process concerning the 2022 CORSIA periodic review.

Application of the safeguards provision in response to the impact of the COVID-19 pandemic

Following the outset of the COVID-19 pandemic in early 2020, the Council initiated work with the aim of assessing the related impact on CORSIA. The Council was supported in this task by the technical inputs provided by CAEP on the impact of COVID-19 on the 2019-2020 average CO₂ emissions (the so-called "CORSA baseline") and on CORSIA's offsetting requirements.

After consideration of all inputs, the Council decided, in June 2020, to apply the CORSIA safeguards provision. In so doing, the Council agreed that, in order to safeguard against inappropriate economic burden on aeroplane operators, 2020 emissions should not be used for three CORSIA design features (the CORSIA baseline; the reference year for calculating offsetting requirements for the pilot phase; and the new entrant threshold). In this regard, the Council decided that during the pilot phase, 2019 emissions shall be used for 2020 emissions and published in all relevant ICAO documents referenced in Annex 16, Volume IV.

The decision made by the Council did not imply a disruption in the CORSIA MRV requirements, so that States and operators were still required, as per Annex 16, Volume IV, to do the monitoring, reporting and verification of CO₂ emissions from international flights performed in 2020. The 2020 CO₂ emissions data may still be required after CORSIA's pilot phase, on account to the fact that the Council's decision was applicable only to CORSIA's pilot phase (2021-2023).

The definition of the CORSIA baseline after the scheme's pilot phase will be considered by the ICAO Assembly on the basis of the outcome of the 2022 CORSIA periodic review conducted by the Council.

2022 CORSIA periodic review

In March 2021, the Council approved the Terms of Reference for the 2022 CORSIA periodic review, thus initiating its work on the topic, with the objective of reporting to the 41st Session of the ICAO Assembly (27 September – 7 October 2022).

Council's work on the 2022 CORSIA periodic review has been supported by CAEP and TAB, on the basis of a series of requests whose scope and related timelines were also determined by the Council in March 2021. An important element of CAEP's technical inputs was the committee's analysis of the impact of COVID-19 on CORSIA, with updates provided at various Council sessions. More information on the CAEP analysis of COVID-19 impacts on CORSIA can be found in the dedicated article in Chapter 8.

The Council's consideration of technical inputs from CAEP and TAB was supported by the Council's Climate and Environment Committee (CEC). More information on the work of the Council on the 2022 CORSIA periodic review can be found in the dedicated article in Chapter 8.

Final remarks

Despite the impact of the COVID-19 pandemic on aviation in general, and on CORSIA in particular, States and operators have been implementing CORSIA as per the established

timeline, and the number of CORSIA volunteer States increases on an annual basis. Both aspects are a reflection of the commitment by ICAO Member States and operators alike to CORSIA implementation.

CORSIA implementation being on track is testimony of a joint vision for the international aviation sector where CORSIA plays a complementary, albeit fundamental, role to the aviation in-sector CO₂ reduction measures already being applied by States and all relevant stakeholders to ensure the achievement of the ICAO carbon neutral growth goal.

The ICAO Assembly will consider, at its 41st Session, the outcome of the work undertaken by the ICAO Council on the 2022 CORSIA periodic review. The robustness of the process and its reliability on robust technical inputs should provide Member States with the confidence to make decisions on the basis of the review's outcome, with the purpose of ensuring that CORSIA contributes to the achievement of the carbon neutral growth goal in the context of a sustainable international aviation sector.